**Amendments to the Claims:**

1. (Previously Presented) An image processing device for combining a current image of an object and a map image of a dwell region of the object, comprising:

a memory for storing a number of map images which are categorized according to a varying state of the dwell region of the object;

a monitor for displaying a combination of the current image and a section of the map image, wherein the current image and the map image are from different imaging source; and

a data processor arranged:

a) to select one of the map images most closely categorized by a current state of the dwell region in which the current image is generated,

b) to estimate the position of the object in the current image in relation to a section of the map image most closely categorized by the current state, the section of the map image most close categorized by the current state of the dwell region just covering a region around the estimated position of the object, and

c) to combine the section of the map image most closely categorized by the current state of the dwell region around the estimated position of the object in the current image, the estimated position of the object in the section of the map image most closely categorized by the current state of the dwell region being brought into registration with the actual position of the object in the current image;

such that the monitor displays the current image with the section of the map image most closely categorized by the current state of the dwell region which just covers the region around the object combined with the corresponding region of the current image.

2-7. (Cancelled)

8. (Previously Presented) The device of claim 9, wherein the data processor is arranged:

to assign to each pixel in the section of the map image most closely categorized by the current state of the dwell region to each pixel a probability that it belongs to the spatially-defined structure.

9. (Previously Presented) The device of claim 1, wherein the data processor is arranged to produce a distance image from the map image most closely categorized by the current state of the dwell region, each pixel of the distance image being assigned a vector which indicates a direction or distance therefrom has a greater probability of the presence of a preselected spatially-defined structure.

10-18. (Cancelled)

19. (Currently Amended) The method of ~~claim 13~~ claim 31, wherein in the step of combining at least the section of the map image with the current image, only the section of map image which just covers the region around the ~~object~~ portion of the catheter or guide wire is combined with just a section of the current image which just covers the region around the ~~object~~ portion of the catheter or guide wire; and

c) generating a display of the current image with just the region around the ~~object~~ portion of the catheter or guide wire being a combination of corresponding sections of the map image and the current image.

20. (Currently Amended) A data-processing system for combining each of a plurality of current images of a patient and a corresponding map image of a region of the patient in a ~~motion~~ state most closely corresponding to [[the]] a current ~~motion~~ state, wherein the current image and the map image are from different imaging sources, the system comprising a data processor ~~programmed~~ arranged for:

receiving one of the current images of the patient in depicting an object which is moving in the patient;

retrieving the corresponding map image from a memory which stores map images corresponding to each of a plurality of the ~~motion~~ states of the region of the patient;

estimating the position of the object depicted in the received current image in the corresponding map image;

registering the estimated position of the object with a position of the object in the received current image; and

combining at least a section of the corresponding map image around the estimated position of the object with the current image with the estimated position of the object in the corresponding map image superimposed on the actual position of the object in the received current image.

21. (Previously Presented) The data processing system of claim 20, wherein the object is moved in a path network and the map images depicts the path network.

22. (Previously Presented) The data processing system of claim 20, wherein one of the different imaging sources provides an image showing the position of an organ, an image showing the formation of a blood vessel, or an image showing metabolic activity.

23. (Cancelled)

24. (Currently Amended) The data-processing system of claim 20, wherein the data processor is ~~programmed~~ arranged to combine only a section of the corresponding map image which surrounds the estimated position of the object with the received current image.

25. (Currently Amended) The data-processing system of claim 20, wherein the data processor is ~~programmed~~ arranged to:

assign to each pixel in the map image a probability that it belongs to a spatially-defined structure of the patient; and

produce a distance image from the map image by a distance transformation, each pixel of the distance image defining a vector that points in a direction of a most direct route to the spatially-defined structure.

26. (Cancelled)

27. (Previously Presented) The device of claim 1, wherein the map images represent at least blood vessels of a patient, the object is at least a portion of a catheter or guide wire, and the current image represents at least the portion of the catheter or guide wire moving through the blood vessels of the patient, and wherein the processor is arranged to estimate the position of the portion of the catheter or guide wire in the current image in relation to the section of the map image most closely categorized by the current state of the dwell region by:

a) segmenting the portion of the catheter or guide wire in the current image;

b) registering the section of the map image categorized by the current state of the dwell region using the distances of a distance image whose pixels indicate a direction or distance in which a blood vessel is most probably located;

c) rigidly displacing the segmented portion of the catheter or guide wire relative to the section of the map image which is most closely categorized by the current state of the dwell region.

28. (Previously Presented) The device of claim 27, wherein the data processor is arranged to combine the section of the map image most closely categorized by the current state of the dwell region with the current image including:

a) superimposing the section of the map image on the current image with the estimated position of the portion of the catheter or guide wire registered with the actual position of the portion of the catheter or guide wire in the current image.

29. (Previously Presented) The device of claim 28, wherein the processor is further arranged to:

carry out a digital contrast enhancement within the section of the map image to improve recognizeability of the portion of the catheter or guide wire.

30. (Previously Presented) The device of claim 28, wherein the superimposed region of the map image contains blood vessels and other than the blood vessels is transparent.

31. (Currently Amended) The method ~~of claim 13, wherein~~ for combining the map images that represent at least blood vessels of a patient[[,]] ~~the object is~~ and a current image that represents at least a portion of a catheter or guide wire, and the current image represents at least the portion of the catheter or guide wire moving through the blood vessels of the patient, [[and]] the current image and the map images being from different imaging sources, the method comprising with a processor, performing the following steps:-

A) estimating [[the]] a position of the ~~object includes~~ portion of the catheter or guidewire including:

a) segmenting the portion of the catheter or guide wire in the current image;

b) registering the section of the map image categorized by the current state using the distances of a distance image whose pixels indicate a direction or distance in which a blood vessel is most probably located;

c) rigidly displacing the segmented portion of the catheter or guide wire relative to the section of the map image which is most closely categorized by the current state; and

B) combining the map image around the estimated position of the portion of the catheter or guidewire with the current image, the estimated position of the portion of the catheter or guidewire in the map image being brought into register with the actual position of the portion of the catheter or guidewire in the current image, using at least a section of the map image which covers the region around the portion of the catheter or guidewire.

32. (Previously Presented) The method of claim 31, wherein combining the map image around the estimated position includes:

a) segmenting the portion of the catheter or guide wire in the current image.

33. (Previously Presented) A tangible computer-readable medium carrying instruction for controlling a processor to perform the method of claim 13.

34. (Previously Presented) The system of claim 24, wherein the section of the corresponding map image contains only the path network and is otherwise transparent.

35. (Currently Amended) The system of claim 20, wherein the data processor is ~~programmed~~ arranged to register the estimated position of the object with the position of the object in the received current image using a distance image, each pixel of the distance image including a gradient vector which points in a direction of the a direct route to a spatially-defined structure of the patient.

36. (Currently Amended) The system of claim 35, wherein the data processor is ~~programmed~~ arranged to segment the object in the current image using a probability based segmentation in which each pixel is assigned a probability that the pixel belongs to the spatially-defined structure of the patient.